Congratulations! You passed!

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1. If you have 10,000 examples, how would you split the train/dev/test set? Choose the best option. 0 / 1 point

- (•) 98% train. 1% dev. 1% test.
- ( ) 60% train. 20% dev. 20% test.
- ( ) 33% train. 33% dev. 33% test.

Expand

Incorrect
No. This might be considered a small data set, not in the range of big data. Thus a more classical (old) best practice should be used.

2. When designing a neural network to detect if a house cat is present in the picture, 500,000 pictures of cats were taken by their owners. **These are used to make the training, dev and test sets.** It is decided that to increase the size of the test set, 10,000 new images of cats taken from security cameras are going to be used in the test set. Which of the following is true? 1 / 1 point

- (•) This will be harmful to the project since now dev and test sets have different distributions.
- ( ) This will reduce the bias of the model and help improve it.
- ( ) This will increase the bias of the model so the new images shouldn't be used.

Expand

Correct
Yes. The quality and type of images are quite different thus we can't consider that the dev and the test sets came from the same distribution.

3. If your Neural Network model seems to have high variance, what of the following would be promising things to try? 1 / 1 point

- [x] Get more training data
  - ✓ Correct
- [x] Add regularization
  - ✓ Correct
- [ ] Make the Neural Network deeper
- [ ] Get more test data
- [ ] Increase the number of units in each hidden layer

Expand

Correct
Great, you got all the right answers.

4. You are working on an automated check-out kiosk for a supermarket, and are building a classifier for apples, bananas and oranges. Suppose your classifier obtains a training set error of 0.5%, and a dev set error of 7%. Which of the following are promising things to try to improve your classifier? (Check all that apply.) 1 / 1 point

- [x] Increase the regularization parameter lambda
  - ✓ Correct

- [ ] Decrease the regularization parameter lambda
- [x] Get more training data

  ✓ Correct
- [ ] Use a bigger neural network

Expand

✓ Correct
Great, you got all the right answers.

5. Which of the following are regularization techniques? 1 / 1 point

- [ ] Gradient Checking.
- [x] Weight decay.

  ✓ Correct
  Correct. Weight decay is a form of regularization.
- [x] Dropout.

  ✓ Correct
  Correct. Using dropout layers is a regularization technique.
- [ ] Increase the number of layers of the network.

Expand

✓ Correct
Great, you got all the right answers.

6. What happens when you increase the regularization hyperparameter lambda? 1 / 1 point

- ○ Gradient descent taking bigger steps with each iteration (proportional to lambda)
- ◉ Weights are pushed toward becoming smaller (closer to 0)
- ○ Weights are pushed toward becoming bigger (further from 0)
- ○ Doubling lambda should roughly result in doubling the weights

Expand

✓ Correct

7. Which of the following are true about dropout? 1 / 1 point

- [x] It helps to reduce the variance of a model.

  ✓ Correct
  Correct. The dropout is a regularization technique and thus helps to reduce the variance.
- [x] In practice, it eliminates units of each layer with a probability of 1- keep_prob.

  ✓ Correct
  Correct. The dropout is a regularization technique and thus helps to reduce the overfit.
- [ ] It helps to reduce the bias of a model.
- [ ] In practice, it eliminates units of each layer with a probability of keep_prob.

Expand

✓ Correct
Great, you got all the right answers.

8. Increasing the parameter keep_prob from (say) 0.5 to 0.6 will likely cause the following: (Check the two that apply) **1 / 1 point**

- [ ] Increasing the regularization effect
- [x] Reducing the regularization effect

  ✓ Correct

- [ ] Causing the neural network to end up with a higher training set error
- [x] Causing the neural network to end up with a lower training set error

  ✓ Correct

Expand

✓ Correct
Great, you got all the right answers.

9. Which of the following actions increase the regularization of a model? (Check all that apply) **1 / 1 point**

- [ ] Use Xavier initialization.
- [x] Decrease the value of keep_prob in dropout.

  ✓ Correct
  Correct. When decreasing the keep_prob value, the probability that a node gets discarded during training is higher, thus reducing the regularization effect.

- [ ] Increase the value of keep_prob in dropout.
- [x] Increase the value of the hyperparameter lambda.

  ✓ Correct
  Correct. When increasing the hyperparameter lambda, we increase the effect of the L_2 penalization.

- [ ] Decrease the value of the hyperparameter lambda.

Expand

✓ Correct
Great, you got all the right answers.

10. Why do we normalize the inputs x? **0 / 1 point**

- (•) Normalization is another word for regularization--It helps to reduce variance
- ( ) It makes the cost function faster to optimize
- ( ) It makes the parameter initialization faster
- ( ) It makes it easier to visualize the data

Expand

✗ Incorrect